
Fourth National Climate Assessment:

Northwest Chapter

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Depth and Breadth of Expertise – *beyond climate change science*

- Social science
- Economics
- Health
- Tribal communities
- Frontline communities
- Climate adaptation
- Agriculture
- Forestry
- Hydrology
- Coasts and beaches
- Marine science
- Ecology



The Northwest



Regional Stressors and Impacts

Coastal

Erosion
Inundation
Flooding
Sea level rise
Storm surge
Wave hazards
Threats to critical infrastructure
Endangers human life and safety
Ocean acidification
Ocean warming
Natural habitats may not keep pace
Shifts in marine species
Toxic algal blooms

Western Lowlands

High temps
Hydrologic change
More frequent and severe flooding
Health risks
Climate migration
Lower summer flows challenge salmon survival
Higher winter flows affect riparian ecosystems
Increased wildfire risks
Shifts in tree species and habitat diversity

Mountains

Higher temps
More rain/less snow
Earlier peak flow
Lower summer flows
More insects and disease
Increased wildfire risks
Shifting vegetation types
Loss of biodiversity
Reduced air and water quality
Increased flood potential
Impacts to recreation and tourism

Inland

Higher temps
Heat stress
Plant growth
Forage quality
Fruit quality
Livestock health
Farmworker health
Increased pests
Seasonal changes
Shifts in growing seasons
Changes in Rangeland productivity
Reduced snowpack
Reduced water availability



Regional Engagement Workshops

March 21st in Portland, OR

March 23rd in Boise, ID

- What we heard changed our approach
- Strong key messages should focus on how climate change will impact what Northwest residents and communities *value*



Key Messages

- 2015 as a case study: Prelude to what is to come
- Natural Resource Economy
- Natural World/Cultural Heritage
- Infrastructure
- Health
- Frontline Communities: (tribes, farmworkers, urban poor/homeless)



Credit: Northwest Treaty Tribes, 2012



2015 Case Study: A Prelude of What's to Come?

- The warmest year on record (back to 1880)
 - 3.8° F warmer on average for the year
 - 6.5° F warmer in winter
 - Consistent with a mid-century projection under RCP8.5, or late-century projection under RCP4.5
- Below normal precipitation – extreme drought
 - Winter 13% below normal
 - Summer 38.5% below normal
 - Summer deficit consistent with the largest decreases in summer precipitation for end of century under RCP8.5



Natural Resource Economy: Current and Future Trends

- Higher temperatures and reduced precipitation is adversely impacting agriculture → Heat stress and reduced water availability is impacting plant, livestock, and worker health
 - 2015 was one of the toughest farming seasons on record
- Higher temperatures and reduced snowpack is adversely impacting forests and forestry → increased wildfire, pest, and disease risks are devastating our forest resources
 - 2015 was one of the biggest wildfire seasons on record
- Higher ocean temperatures and acidity are impacting fisheries → increased toxic algal blooms, changes in species diversity, etc.
 - 2015 had the largest algal bloom on record, “the Blob”, and extensive fisheries closures



Infrastructure:

Current and Future Trends

- Transportation road and railway closures result from flooding, landslides, mudslides
 - Tillamook, OR; December 2015 – Heavy rainfall and high coastal water levels led to flooding, culvert failures, road closures, and reduced access to health facilities.
 - Snoqualmie Pass, WA; December 2015 – landslide closed eastbound Interstate 90
- Water availability
 - Washington Department of Ecology allocated nearly 7 Million for drought relief in 2015 – backup and emergency water for irrigation and human consumption
- Power disruption
 - Goodell wildfire in August 2015 resulted in 3 Million in damages and lost production at the Skagit Hydroelectric Project



Public Comment Period

Open: Nov. 3- Jan. 31, 2018



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NCA4 Review and Comment Now Open

Review and comment on the public draft of Volume II of the Fourth National Climate Assessment, *Climate Change Impacts, Risks, and Adaptation in the United States*. The deadline for providing comment is January 31, 2018.

[REVIEW AND COMMENT](#)

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How to Comment

- All comments must be submitted via the USGCRP Review and Comment System
 - To register as a reviewer and access the draft, visit <https://review.globalchange.gov>
 - Enter existing credentials or create a new account
 - A link under the 'Documents Available for Public Review' banner will become active, routing users to terms of use, instructions, and the draft of NCA4 Vol. II
 - Online mechanism to comment or an off-line spreadsheet to upload
- **Open: November 3, 2017- January 31, 2018**
- **Important note:** NCA4 Vol. II is a DRAFT document and does not represent an approved product of the USGCRP. It should **not** be cited, quoted, or distributed (USGCRP Letter 11/3/17)



USGCRP Public Webinars on Review & Comment website

Last Webinar:

- Tuesday, Jan 16, 8pm EST
- Webinar link: <https://icf.globalmeet.com/NCAProjectWebinar>
- Call-in: (605) 475-5606
- Passcode: 9663019548#



Thank you!

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Submit Comments on NCA4

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